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The Reproductive Husbandry of Kenyan Sandboas

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The Kenyan sandboa, *Eryx colubrinus loveridgei*, is the most common sandboa species in captivity in U.S. collections. It is also referred to as the East African sandboa. The use of "Kenyan sandboa" to identify this taxon dates back to the mid-1970s when the first specimens were imported to this country; Kenya was the country of origin of those first few sandboas. Not long after, the country of Kenya stopped all exports of live boas and pythons.

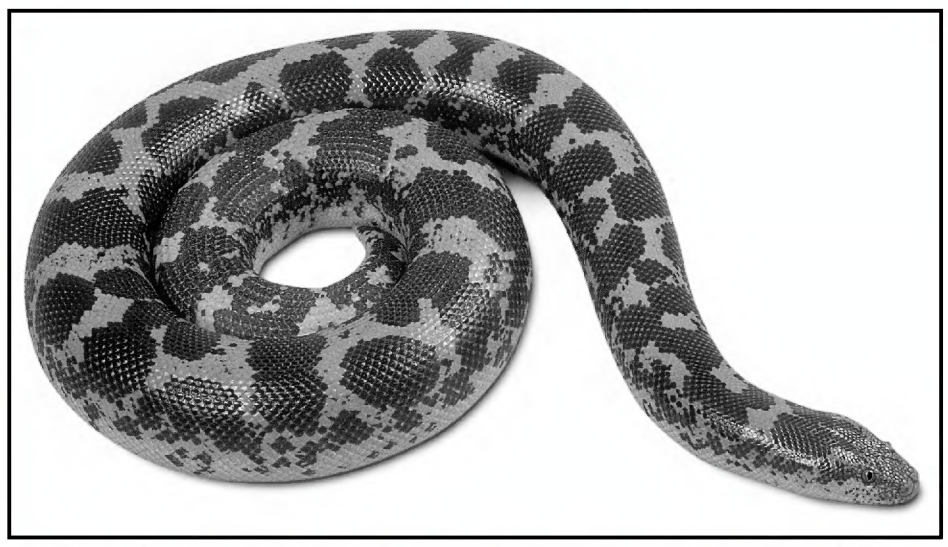
Kenyan sandboas are found from central Ethiopia south to the Dodoma Province of Tanzania, and from southwestern Somalia west across Kenya to the Uganda border. Considering that most U.S. captive specimens are actually descended from Tanzanian stock, the common name "East African sandboa" is probably more appropriate. Nevertheless, "Kenyan sandboa" is the more commonly used name by American keepers.

The first captive breeding of Kenyan sandboas took place in the Houston Zoo in 1979. A paper published in 1982 by John McLain, then the boa and python keeper at the Houston Zoo, described how the female delivered three clutches of babies in two calendar years. At that time, this taxon was very rarely seen in captivity, and the captive-breeding of any boa species was considered noteworthy.

We obtained two baby Kenyan sandboas from one of the early breedings at the Houston Zoo. They were born in 1980. The female died in 2005 at the age of 25 years. The male is still alive in 2013 and is still successfully breeding.

The female bred a total of 19 times in her life, producing more than 300 perfect, well-formed babies without a single deformation or infertile egg mass. She began breeding at four years of age, then delivering a litter of 12; in 1998 she delivered her largest litter of 23. Many of the Kenyan sandboas alive in this country are likely descended from her. She was the largest specimen of Kenyan sandboa that we personally have ever held in hand; she eventually attained a size of 88 cm (34") in total length and weight of 850 g (1 lb, 14 oz).

This subspecies is sexually dimorphic. Our older animals are a good example. In his 20th year, the male was 56 cm (22") in total length and weighed about 175 g (6 oz); that is about the size of a female of 18 months age and much smaller than his very large sister.



An adult Kenyan or East African sandboa, *Eryx colubrinus loveridgei*. Photograph by David G. Barker.

Maintenance

Kenyan sandboas require a secure well-ventilated cage. A glass aquarium with a secure ventilated top (screen wire or perforated metal) can be a satisfactory cage in which to display these beautiful snakes. For years now we have kept our Kenyan sandboas in plastic enclosures in shelf racks. The shelves of the racks are ventilated and provide a ventilated top to each sandboa cage such that humidity doesn't build up in the cage. For many years we kept males in Rubbermaid 16-quart storage boxes with floors measuring 9 × 14", and females in Rubbermaid 32-quart boxes measuring 12 × 18". Today we keep both sexes in boxes with floors measuring 11 × 18". Each cage is supplied with a 16 oz water bowl that is sunken into the substrate.

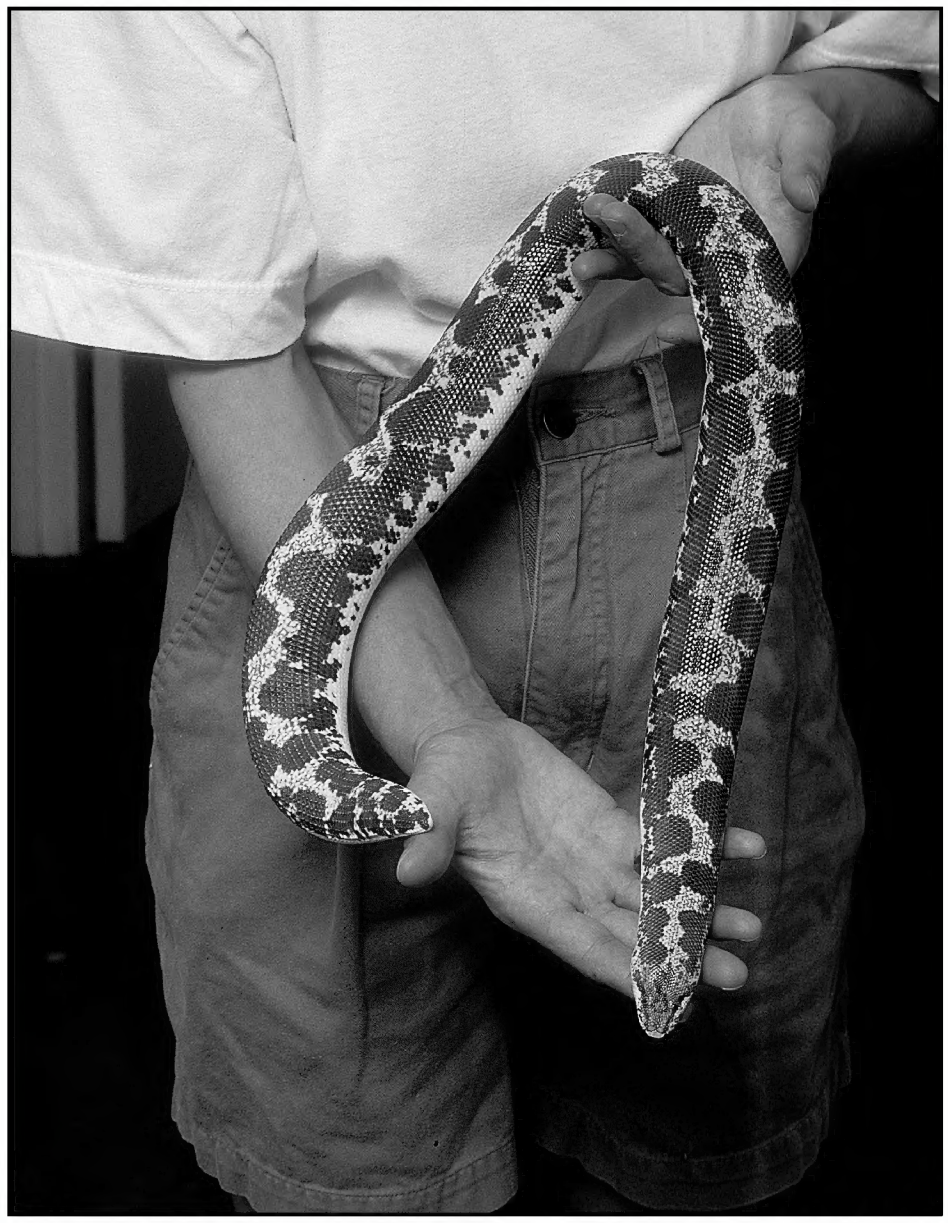
Over the years we have maintained this species on newspaper, aspen bedding, commercially available brown aquarium gravel, sand, and potting soil. All of these substrates worked adequately, but it has been our experience and observation that this species does extremely well with substrates of aspen bedding or potting soil. In fact they will thrive if kept on paper, but they really do best if allowed to burrow.

These sandboas can be successfully maintained in sand or gravel. However, in nature Kenyan sandboas are associated with loamy soils and are burrow inhabitants. They are not loose sand or sand dune dwellers, as are some of the other species of sandboas. This "sandboa" does not do well in sand.

It is our observation that, given the choice, East African sandboas prefer aspen bedding or potting soil to loose substrates, probably because of a slightly higher level of humidity in those substrates and because these substrates allow the sandboas to construct and use semi-permanent burrows.

When using aspen bedding or potting soil as substrate for adult sandboas, we have had the best results when the substrate is kept 7.5–12.5 cm (3–5") deep in the cage. The animals then create their burrows which we occasionally disturb during cleaning. However, we purposely do not meticulously clean these cages on a daily or weekly schedule. We check the cages daily, paying particular attention to the ambiance and odor of the cage. If it smells fresh and clean, then we don't disturb it. If the odor of some large stool or uneaten meal is detected, then the source of the offending odor is removed. Every second or third month, all the bedding is replaced. It is a very efficient way to maintain the sandboas, who themselves are efficient and clean snakes and allow such a lenient maintenance regime.

These sand boas can live long lives if kept at constant temperatures of in the range of 27–29°C (79–84°F). However, for an optimal breeding environment, we recommend providing a range of temperatures in a sandboa cage; in other words, most of the enclosure at an ambient temperature of 25–26.5°C (77–



A large adult female East African sandboa. This particular animal lived to be 25 years old and had 19 litters of babies. A female about 65% of this length, and half this weight can be an excellent breeder. Photograph by David G. Barker.

79°F). but with an area of heated substrate so that a snake can choose a warmer temperature when preferred.

A warmer basking area can be created in several ways. Sandboas like to bask under warm lights or ceramic bulbs. Likewise, they will sit on a warm area of substrate, heated from below with some type of heating pad. Either way, they usually "bask" in the warmer temperature while in a burrow in the warmed substrate, and not exposed on the surface. We provide a heat-tape that runs under one end of the enclosure, about 2 cm from the side of the cage. The temperature on the floor of the cage, under the substrate and immediately above the heat tape is 34.5°C (94°F).

As is true for many snakes, sandboas can better tolerate temperature extremes if they do not have food in their digestive system. If recently fed, they should not be subjected to temperatures more than 35°C (95°F) or below 23.4°C (74°F). When empty of food, Kenyan sandboas are tolerant of a wider range of temperatures.

Husbandry

We have taken a very simple approach to breeding Kenyan sandboas that has been successful. We use annual light cycles as an important part of the breeding regime, ranging from 15 hours of light at summer solstice to nine hours of light at winter solstice. Both sexes of breeders are fed until mid-December. During the last quarter of the year we feed our females increased amounts of food, resulting in an observable increase in girth and weight by these females. Some males on their own may refuse food late in the year; occasionally males may stop feeding as early as September and not resume feeding until May. But if they'll eat, we feed them until mid-December.

At the end of December we place pairs together, placing the male in the female's cage, and leave them together usually until late April. On the first of January we turn off the supplemental basking heat underneath the cages of the breeders. From the first of January to mid-February the snakes are maintained at 24.5–26.8°C (76–80°F) without any supplemental heat.

In mid-February we resume the slightly warmer normal ambient temperatures and turn on the supplemental basking heat. Several days later we begin feeding the females. We have witnessed copulations from January through early April. Usually by late March the females are staying on the heated basking area for extended periods of time, carefully aligning their distended bellies along the heat tape where it crosses the cage. The males are removed to their cages in April and are then offered food; at that time most males will feed.

The optimal temperature of a basking gravid female that is checked with a non-contact temperature-sensing gun while she is positioned on the heated floor of the cage is 30.6°C (87°F); we regulate the temperature of the heated area of the floor of the cage to achieve this temperature. We regulate cage temperatures to keep the ambient body temperature of a gravid female that is not basking at or about 28°C (83°F).

We have observed that at ovulation the female sandboas show an obvious midbody swelling. This is termed "lumping" by breeders of boas and pythons, referring to a large temporary swelling that occurs from the time when the mature follicles are released by the ovaries until the time when the egg masses, now termed "ova," are moved into the oviducts and spaced along the lengths of the oviducts. The sperm from earlier copulations is present in the oviducts, and fertilization occurs during this time. The period of lumping lasts one to two days, but, as the females usually are in their tunnels in the substrate, out of sight, and we

A newborn East African sandboa, less than a day old. This particular baby is a paradox-albino morph. Paradox-albinos have a pale yellow ground color and rounded gray-brown blotches. They also have inky spots, freckles and small blotches of black melanin randomly placed on the body. Photograph by David G. Barker.

A litter of 18 normal babies, about 12 hours old. Already some of the babies have shed. Photograph by David G. Barker.

have only occasionally happened to observe females sandboas during this brief time. We make every attempt not to disturb ovulating females.

Our females typically feed through most of their gestation. Females typically shed three weeks after ovulation, and deliver their litter about 100 days after this shed. We have had litters born from late July to mid-November. Over the years, our oldest female has delivered most clutches of babies during the first ten days of August, but other females have not been so consistent.

In our experience, clutch size varied from 3 to 23. Even though infertile egg masses (often referred to as "slugs") are a fairly common occurrence in the captive breeding of many live-bearing snakes, we've never seen an infertile egg mass delivered by any species of sandboa; it's possible that this non-observation might indicate that females eat any infertile egg masses they deliver.

At birth, our Kenyan sandboas are 20–23 cm (8–9") in total length and weigh just a fraction of an ounce, only 7.5–9 g. The babies are taken from their mother's cage and set up together in a cage with damp paper towels as substrate. Some babies shed their skins within 24 hours of birth, some just minutes after birth, but other babies may not shed until they are 7-10 days old. Babies are easily sexed, as the tails of males are longer than the tails of females from the time they are born. Babies are easy to sex by "cloacal popping," so any uncertainty can be resolved with confidence.

Caring for the babies

We keep newborns and youngsters in a different setup than older sandboas. While they like to burrow in any substrate, we found that if we created a setup that allowed them to them do so, we then had more difficulties getting them to feed. They end up "hiding" from food that is offered to them and in order to monitor them, we had to dig them up and disturb them.

We house babies individually, separating them several days after birth. The first cage for a baby sandboa is a ventilated plastic box with approximately 250 sq cm (40 sq in) of floor space. In each box is a 6 oz plastic water cup, a sprinkling of aspen covering one half of the cage floor, and one folded paper towel placed on top of the aspen. The aspen is shallow, less than 1 cm (< .4") in depth. In this setup, a youngster sits under the paper towel nestled in the aspen, but he is visible to us when we lift the paper towel without our having to excavate him. We are thus able to monitor him and present food to him without unduly alarming him.

When it comes time to get them to feed, newborn Kenyan sandboas generally present their keepers with few problems. We typically wait 2–3 weeks before we feed them, allowing them to utilize the yolk in their bodies. During that time we handle them minimally. We then offer them live small pink mice for their first few meals, simply placing the prey in the cages and letting the babies follow their instincts. Most often we set the pinks on top of the folded paper towels, and close the boxes and place them back in their places as quietly as possible, knowing that the vibrations of the live pinks moving on the towels are intriguing to the youngsters underneath.

A small percentage of youngsters may not be feeding after several chances. One method that we have employed with some success is to enclose a recalcitrant feeder in an empty (ventilated) plastic butter tub with a tiny live pink mouse. The enforced close proximity to prey often seems to elicit a feeding response from the little snake.

A baby sandboa with a stuck shed can be enclosed in a ventilated plastic butter tub with a piece of wet paper towel. We recommend this rather than soaking in water.

Most adult East African sandboas are very docile and reluctant to bite when they are being handled. Babies are typically snappy, but they are small and the bites are harmless. But when calmly and consistently handled, the youngsters grow to be very docile and trusting adults.

To conclude, the Kenyan sandboa has a well established, viable, self-sustaining captive population, with breeding colonies found across the USA and Europe, and many other localities in the world. No wild-caught animals have been imported to the USA since the mid 1990s, yet the captive population continues to grow. Kenyan sandboas are easy to raise, simple to maintain, and uncomplicated to breed. There are a variety of color and pattern morphs that are commercially available. Kenyan sandboas are beautiful snakes, and in many respects are ideally suited for captivity.

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McLain, J. M. 1982. Reproduction in captive Kenya sand boas, *Eryx colubrinus loveridgei* (Stull). Pp. 76-82. *In*: Fifth Annual Reptile Symposium on Captive Propagation and Husbandry. Thurmont, Maryland, USA: Zoological Consortium Inc.

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Notes on the Herpetofauna of Western Mexico 9: Current status of Green Iguanas (*Iguana iguana*) and Western Spiny-tailed Iguanas (*Ctenosaura pectinata*) in the Protected Natural Area "Estero El Salado" in Puerto Vallarta, Jalisco, Mexico

Ángeles Penilla-Juárez [1], Daniel Cruz-Sáenz [2] and David Lazcano [3]

Abstract

To determine the current status of the populations of green iguana (*Iguana iguana*) and western spiny-tailed iguana (*Ctenosaura pectinata*) we conducted surveys each month for a year at three locations in the Protected Natural Area "Estero El Salado." Our objectives included identifying the causes for the decrease in iguana populations and determining abundance for adults, males, females and hatchlings.

Resumen

Con el fin de comprender la situación actual de las poblaciones de iguana verde (*Iguana iguana*) y garrobo de roca, o iguana negra (*Ctenosaura pectinata*) se realizarón muestreos mensuales por periodo de un año en tres localidades dentro del Área Natural Protegida "Estero El Salado." El objetivo de este trabajo es conocer las causas del decremento de las poblaciones de iguana en el Área Natural Protegida. La relación de las abundancias (por sitio y por mes) entre los estadios de adultos, subadultos y crias, asi como proporcion de sexos entre machos y hembras

Introduction

Green iguanas and western spiny-tailed iguanas are economically important species due to exploitation of their eggs and meat. Monitoring their abundance is culturally relevant (Esquivel, 1999; Arcos-Garcia et al., 2002) as the populations of these species have declined over the years. Green iguanas and western spiny-tailed iguanas are threatened by overexploitation and habitat destruction, and these species are protected by the Mexican environmental law (SEMARNAT, 2010) but this listing has little ecological impact.

Recently iguana populations in the Protected Natural Area (*Área Natural Protegida* or APN) "Estero El Salado" have decreased and we have attempted to determine the causes.

Materials and Methods

The APN "Estero El Salado" is located in the municipality of Puerto Vallarta, Jalisco, Mexico. In this area there are four vegetation types: semideciduous forest, mangrove, grassland and aquatic vegetation. Mangrove vegetation is the most abundant and widely distributed vegetation type and includes: red mangrove (*Rhizophora mangle*), white mangrove (*Laguncularia racemosa*) and black mangrove (*Avicennia germinans*). These plant species are protected by Mexican environmental law (FIDES, 2007; SEMARNAT, 2010).

A total of 99 species of birds, 24 amphibians and reptiles, and 17 mammals have been reported for "Estero El Salado."

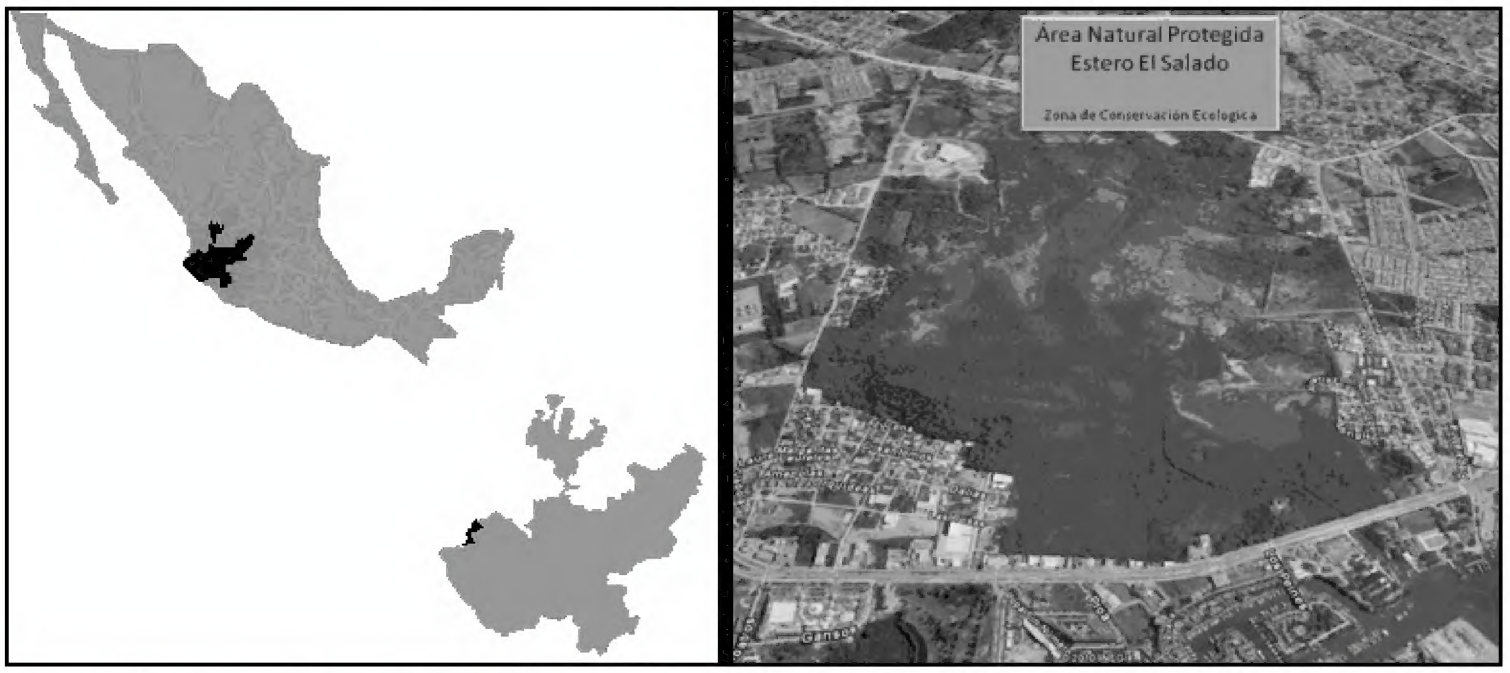

Figure 1. Location of "Estero El Salado."

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Table 1. Sightings of each iguana species by sample site.

Site	*C. pectinata*	*I. iguana*
Las Higueras	16	39
El Vivero	7	11
El Canal	0	67

Sample sites:

Site 1: "Las Higueras" At this site there are groups of fig trees (*Ficus padifolia* and *Ficus citrifolia*), *Bursera arborea* and *Attalea cohune*. The trees grow up to 20 meters above the ground where green iguanas are seen basking. The dominant vegetation type is semideciduous forest and there is less mangrove vegetation in this area.

Site 2: "El Vivero" has thorny vegetation, secondary vegetation, and many introduced species, as it is bordered by part of Puerto Vallarta. This site is located adjacent to the mangrove, thorn forest, and halophytic vegetation types in the area.

Site 3: "El Canal" At this site the dominant vegetation is mangrove. The survey for this site was done in the channel of the estuary by boat. Starting from the channel outwards, the mangroves present are the following species: red mangrove (*Rhizophora mangle*), white mangrove (*Laguncularia racemosa*) and black mangrove (*Avicennia germinans*).

Results

Fieldwork

Twelve surveys conducted between November 2010 and December 2011 resulted in a total of 140 encounters with the two iguana species (Table 2).

Rodda et al. (1998) state that capture-mark-recapture methods using toe-clipping are unsuitable for iguanas due to their arboreal behavior. As a result of the gregarious behavior in both juveniles and adults, some population studies have been performed using sightings only (Lara-López and González-Romero, 2002; Muñoz et al., 2003).

In "Estero El Salado" iguanas perch in the *Ficus* trees at 20 m height and field work was conducted using individual sightings (Lara-López and González-Romero, 2002; Muñoz et al., 2003).

Surveys were performed monthly between November 2010 and December 2011. With the intention of covering all vegetation types in "Estero El Salado" a prior survey was conducted to identify the sampling sites.

In each survey two participants conducted the sampling. In each of the sites a transect of 500 m in length and 20 m in width was used to estimate the abundance of the two iguana species. In these surveys abundance, sex, and class stage of the iguanas were recorded. In addition the size of individuals, femoral pores, and gular fold were recorded. We recorded 117 green iguanas and 23 western spiny-tailed iguanas.

The site "Las Higueras" had the greatest number of individuals of western spiny-tailed iguanas, whereas at "El Canal" the species was not recorded. For green iguanas the site which accounted for most of the records was "El Canal," probably because it is a nursery area for the species.

Abundance

In the APN we recorded more green iguanas than western

Table 2. Numbers of two iguana species sighted during monthly surveys at three "Estero El Salado" sample sites.

	Las Higueras		**El Vivero**		**El Canal**		**Total sightings**	
	C. pectinata	***I. iguana***	***C. pectinata***	***I. iguana***	***C. pectinata***	***I. iguana***	***C. pectinata***	***I. iguana***
January	2	3	0	3	0	0	2	6
February	0	1	2	2	0	2	2	5
March	4	0	0	0	0	5	4	5
April	2	0	0	0	0	0	2	0
May	2	7	1	2	0	10	3	19
June	1	3	1	3	0	16	2	22
July	1	11	0	1	0	8	1	20
August	0	5	0	0	0	4	0	9
September	0	0	0	0	0	4	0	4
October	2	3	0	0	0	7	2	10
November	2	4	1	0	0	8	3	12
December	0	2	2	0	0	3	2	5
Total sightings	16	39	7	11	0	67	23	117

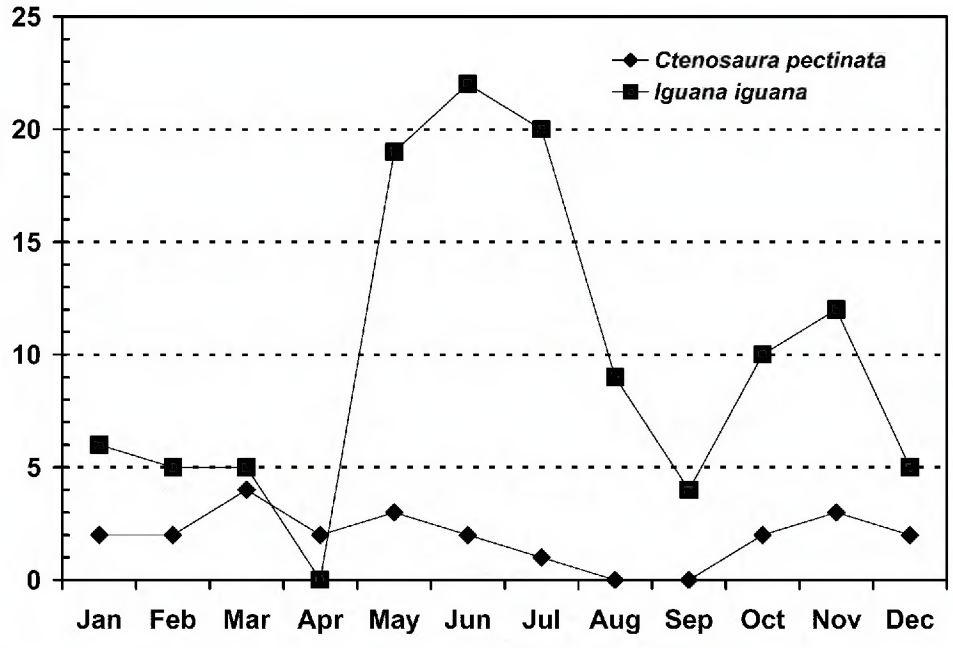

Figure 2. Numbers of iguanas recorded during monthly surveys in the APN "Estero El Salado."

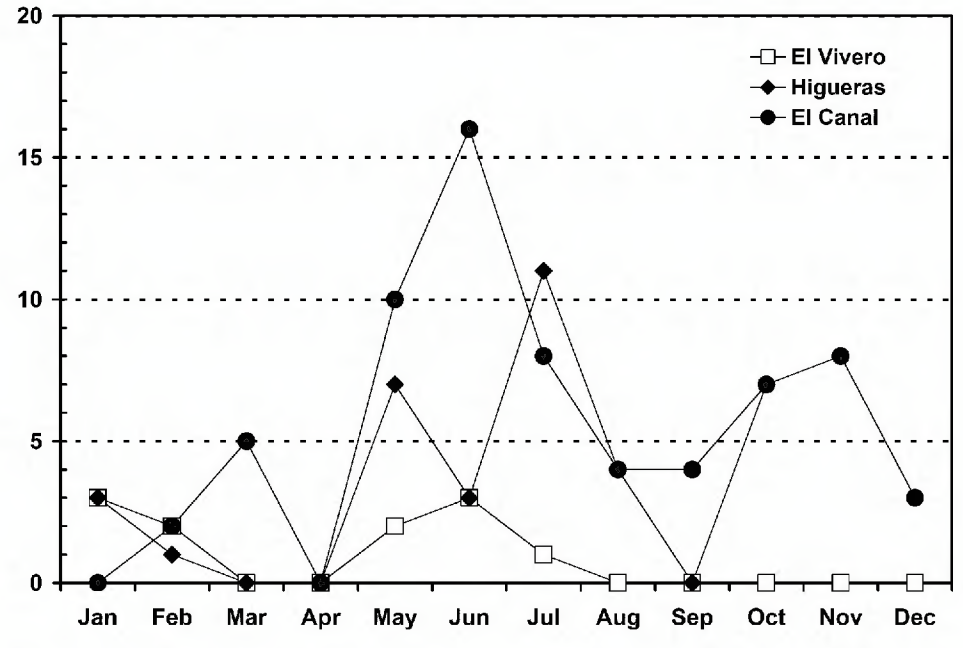

Figure 3. Numbers of green iguanas recorded during each monthly survey at each of the three sample sites.

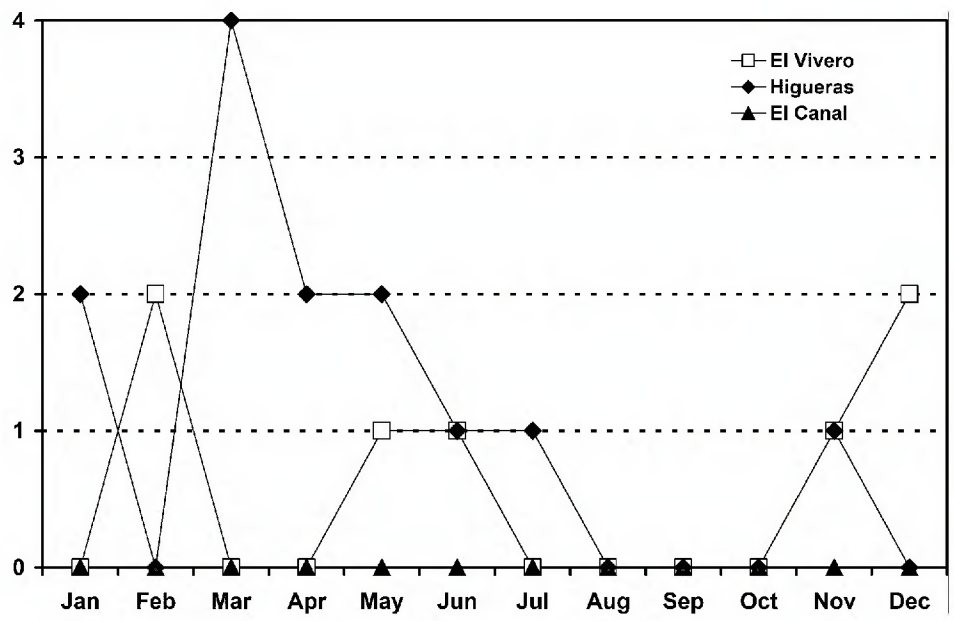

Figure 4. Numbers of western spiny-tailed iguanas recorded during each monthly survey at each of the three sample sites.

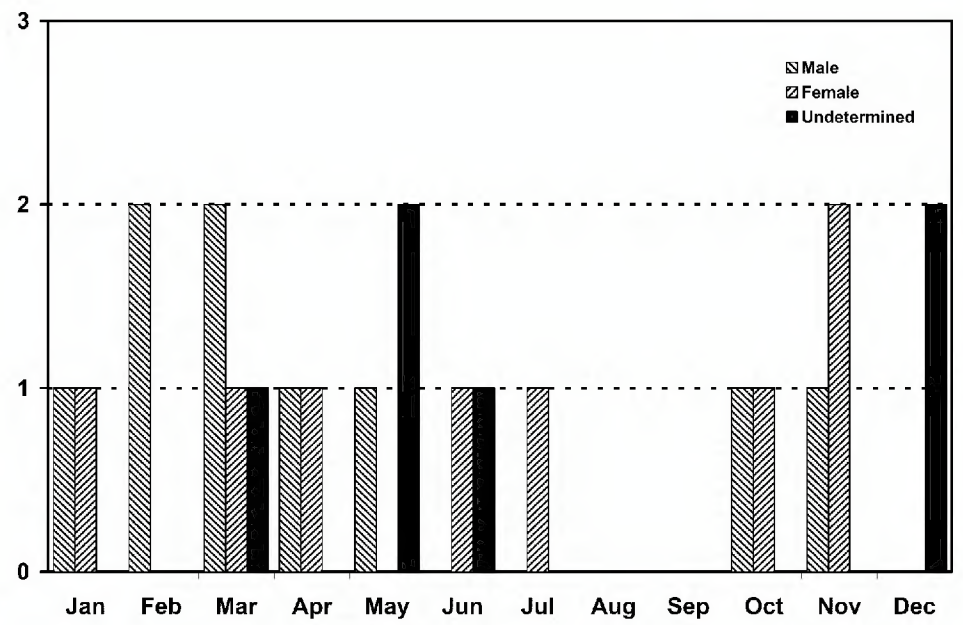

Figure 5. Numbers of western spiny-tailed iguanas recorded during each monthly survey by sex.

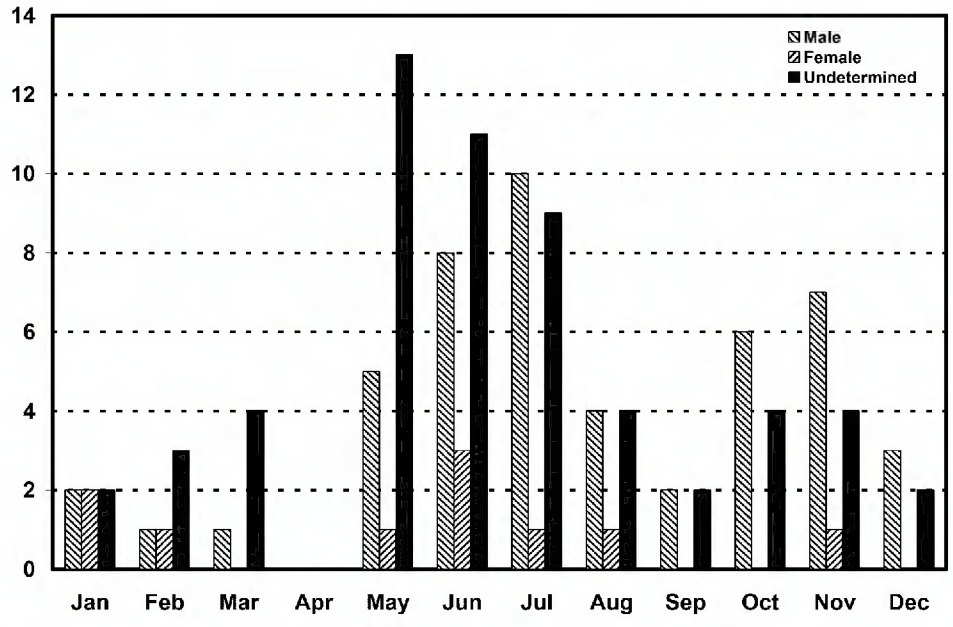

Figure 6. Numbers of green iguanas recorded during each monthly survey by sex.

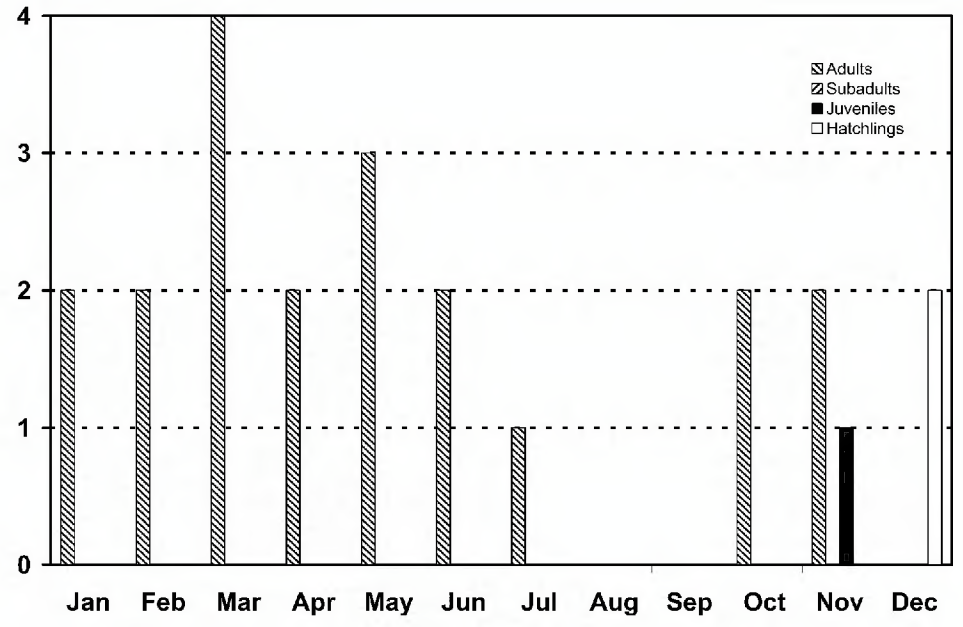

Figure 7. Numbers of western spiny-tailed iguanas recorded during each monthly survey by age class.

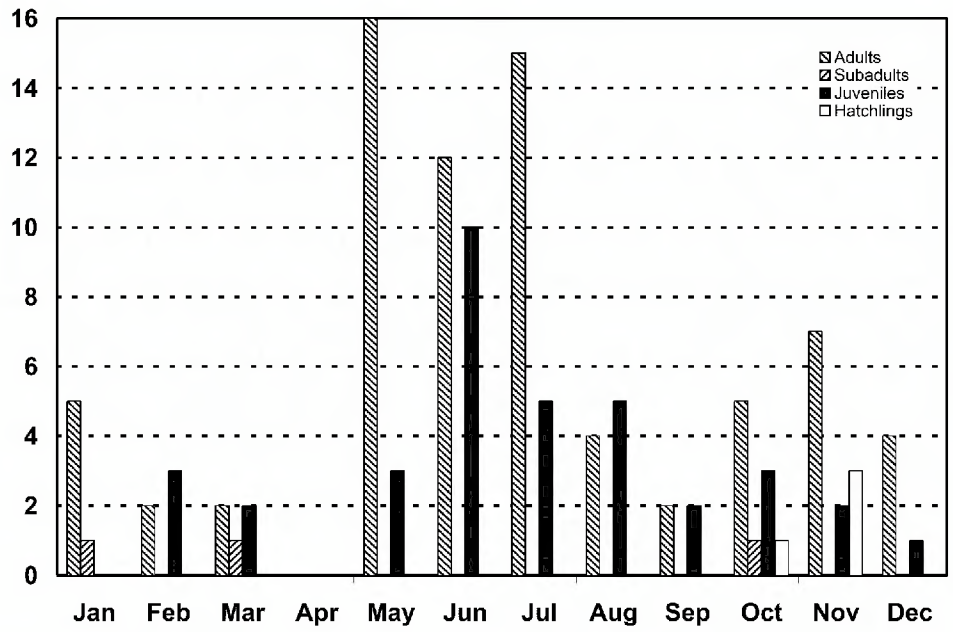

Figure 8. Numbers of green iguanas recorded during each monthly survey by age class.

spiny-tailed iguanas (Figure 2) with 117 total sightings of green iguanas (*Iguana iguana*) and 23 total sightings of western spiny-tailed iguanas (*Ctenosaura pectinata*) across all sites for the year (Table 2).

At the site "El Canal" the month of June had the most green iguanas in the estuary (16 out of a total of 22 green iguanas seen that month) (Figure 3) (Table 2). And in March at the site "Las Higueras" the most western spiny-tailed iguanas were seen (4 iguanas in that month at the site) (Figure 4) (Table 2).

Population structure

We attempted to record the sex of all iguanas seen. This was not always possible due to behaviors such as basking in the tree canopy, in which case sex was recorded as undetermined. For western spiny-tailed iguanas we recorded 9 males, 8 females and 6 undetermined. For green iguanas the numbers were 49 males, 10 females and 58 undetermined. (Table 3; Figures 5 & 6).

In other studies of green iguanas more females than males have been found (Muñoz et al., 2003). In this study we encountered more males than females during the months of February and March for western spiny-tailed iguanas (Figure 5), and in May and June for green iguanas (Figure 6). This can be attributed to reproductive behavior where the males exhibit themselves and can be more easily spotted in the canopy.

We observed more adults than all other life stages combined, due to the physical characteristics that facilitate observation (Table 4).

Early life stages of the two iguana species experience high pressure by predators such as raccoons (*Procyon lotor*), which are common in the area. Elimination of raccoons can benefit a green iguana population (Meshaka et al., 2009), and a similar

Table 3. Number of individuals recorded by sex for each iguana species.

	Ctenosaura pectinata	*Iguana iguana*
Males	9	49
Females	8	10
Undetermined	6	58

Table 4. Number of records per life stage in each iguana species.

	Ctenosaura pectinata	*Iguana iguana*
Adults	20	74
Subadults	0	3
Juvenile	1	36
Hatchlings	2	4

case for ctenosaurs was documented in Florida (Meshaka et al., 2008). In "Estero El Salado" we must also consider the presence of many feral dogs and cats in the area. Another possible native predator is the American crocodile (*Crocodylus acutus*).

For *Ctenosaura pectinata*, two hatchlings were observed in December (Figure 7), which corresponds to the period found by Bock et al. (1998) and Valenzuela-López (1981) indicating that hatching occurs in the rainy season, similar to *Iguana iguana*, in which hatching occurs in October and November (Figure 8).

Juvenile *Iguana iguana* were observed year-round, but in June–August there was a higher number (Figure 8), This could be due to the gregarious behavior of the green iguanas and the absence of parental care in the same species, siblings born in the previous year tend to join groups established nearby.

Conclusions

The dominant iguana species in the "Estero El Salado" is the green iguana (*Iguana iguana*). We observed more males than females. Adults were the life stage we most frequently observed for both green iguanas and western spiny-tailed iguanas.

The sample site where we observed the most green iguanas was "El Canal." The month in which the most green iguana observations occurred was June. The site with the most western spiny-tailed iguanas observed was "Las Higueras." The month with the most observations of western spiny-tailed iguanas was March. There were very low densities of both iguana species in the "Estero El Salado."

The presence of feral mammals (dogs and cats) is a problem for the populations of both green iguanas and western spiny-tailed iguanas. This has been mentioned for other species of

A western spiny-tailed iguana, *Ctenosaura pectinata*, in APN "Estero El Salado." Photograph by Daniel Cruz-Sáenz.

A green iguana, *Iguana iguana*, in APN "Estero El Salado." Photograph by Daniel Cruz-Sáenz.

iguanas by Iverson (1978) and other fauna in Australia by Dickman (1996). Studies on green iguana density in Florida have been documented by Smith et al. (2007).

Despite the ANP being a controlled-access area, cases of illegal poaching of both iguanas in the estuary happen. this has increased over the years, putting more pressure on the populations. This is particularly a problem for green iguanas, which are consumed in the area more than the western spiny-tailed iguanas.

Regardless of natural predators, the ANP "Estero El Salado" has no sandy beach areas, suggesting that the green iguanas are nesting in areas where hard floors are present. This implies that the nests are shallow and are easily preyed upon by raccoons, opossums (*Didelphis virginiana*) and humans. (Morales-Mávil et al., 2007). In population studies of green iguanas in Panama, hatchlings were affected by parasites, the rainfall season, and soil moisture (Bock and Rand, 1989).

Acknowledgments

We thank the "Estero El Salado" Administration and Universidad de Guadalajara for the financial support for this project. And special thanks to the biologists Jaime Torres-Guerrero, Victor-Santos and Alejandra Cueto-Mares for the support in the field surveys, and to biologist Alfredo Frías-Castro for characterizing the vegetation.

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In fond remembrance of Ilene Sievert, who died December 16, 2012, this year we will reprint several of the essays that Ilene wrote for these pages between 1988 and 1993 under the rubric "Frog City." This one is from June 1990.

Frog City

by Ilene Sievert

VI. Living in Captivity

Omne animal est substantia, omnis homo est animal,
ergo, omnis homo est substantia.

All men are mortal.
Socrates is a man.
Therefore, Socrates is mortal.

Even a pampered and well-shielded child will eventually discover that; though a person tries always to be nice, works hard, saves her money; though she eats lots of fruit and avoids fried foods; yet she may be afflicted with pain, crippling, disease, accident, and to top it off, death. Youth and innocence will not save her, nor will dignity, honors, achievements or wisdom of experience. Regrets and repentance avail not. Everyone must take her unequal portion in the fragility of life and suffer the dice-throw of chance. Sometimes this cannot be seen without glasses.

As my childhood progressed so did myopia, and I needed glasses long before getting them. I rooted through books with the tip of my nose as a kiwi probes worms. My last name began with a B and school seating was alphabetical so I generally occupied a front seat near the blackboard and teacher. By means of squinting and careful slow copy I seemed no more stupid and sloppy than the average kid and attracted no unwanted attention to my visual deficiencies. But, in high school there was a flood of additional students and, betrayed by the second letter, u, I was pushed to rear seating by those of alphabetical precedence. There arose a strong need to request a personal variance from custom, a serious matter in traditional culture; a serious matter for me. Although I persuaded the less principled teachers, defeat waits patiently for its victim when one obstacle is sufficient. At last and alas, a grim and iron-willed math teacher held up for the Daughter of Israel the graven stone tablets of the immutable seating plan, and forced my parents to do their unpleasant duty upon the vain and reluctant child.

In the movies of my youth, glasses on a woman denoted an unattractiveness so profound that male characters would treat her as a sort of neuter or even as invisible. Ah, but when she removed those glasses her hair loosened, dress shrunk, bosom swelled, lips reddened, lashes and heels elongated in an amazing metamorphosis. The hero noticed her. I was convinced that uncorrected female vision had a powerful stimulative effect on males and I did not wish to set the seal of doom on future romance. So the dreadful unfeminine glasses were used only for reading the blackboard or sheet music, otherwise hung on a chain around the neck, in the manner of a middle-aged sales clerk or dressmaker. A clear view of detail did not obtrude upon a pleasantly fuzzy view of the world at large.

My viewing bubble shrank to the point of hazard. By the time I left high school and moved to another more perilous neighborhood, glasses were necessary in the streets as well as the cloister. Then everywhere the ugly details of my surroundings were revealed in an awful nakedness more shameful than marriage of a son to his father's wife. Transcending all else was a filth of litter, the lowest levels united in a matrix of cigarette butts, gum wrappers, and broken glass. The trampled and choking grass glittered with it. Grey veils cloaked the glass panes and streaked the Gothic limestone buildings.

Along with the discovery of universal filth, grey suds rinsed out of long beatnik hair and large black flecks in white bathtubs, I also first noticed that most of the older university buildings had names and inscriptions set in brass plates or carved into their entry portals, those arched openings too grand and digni-

fied to be mere doorways. Some carven names were of Founders, those of large accomplishment or purse. Other inscriptions denoted the function of the building, the name of the department or school of study. The complex of Billings Hospital had many such entries and departments. Two of them had titles that are monuments of my memory. One was The Home for Destitute Crippled Children, the other The Home for Incurables. What a world—where fresh sweet children could be not only crippled but also destitute! It occurred to me that all mortals, as Socrates in the syllogism, are incurable. Each creature living is too poor and weak to pay all debts as they come due and so falls fatally in arrears. Remember the lady who spent all of her life sweeping, died and was buried in dirt. Even the blessed dirt will not have its peace, but is endlessly changed and reformed, to flow and to float in a ceaseless cycle till it runs smack into the end of the universe, an event I do not expect to witness, survivalism notwithstanding.

It is so maddening to be vulnerable and short-lived when imagination covers so much more. Further, the human sense of justice is offended by undeserved suffering. "Not fair! Not fair!" An implied promise seems broken. To invest heavily in rebellion and grind up precious time ranting on the cruelty of existence—this offers the dubious comforts enjoyed by Captain Ahab. Hostility can be turned inward. Perhaps, one may think, we deserve anything nasty that comes down the pike; in fact, most of us get off more generously than we deserve. Mark Twain thought there wasn't a man who didn't deserve hanging. It's doubtful the idea solaced his old age. On a different tack, instead of fighting life or ourselves and/or the rest of the universe, we could become passive, fatalistic, dull to frustrations and horrors, indifferent to justice. Are they not One, the Slayer and the Slain? If my little angst seems a bit simplistic and tiresome, consider that if I were Plato all this would be wrong on a much higher level and at greater length.

Small wonder there is no universally accepted answer to the age-old question, "How shall a woman live?" I'm determined to take hammer and tongs to the problem, forgive God and myself and enjoy life without being a comic-cosmic kvetch.

As we seem prevented from reliving our lives, the same lives, that is; from consciously correcting as we redo them, applying what has been learned to repeated youth; yet we can vicariously repeat the very short lives of other creatures whose full span is naturally more brief than human years. Consider looking through the wrong end of the microscope, losing a lot of detail and refinement, simplifying and reducing the model to a manageable size. Its grosser dimensions become more comprehensible. The little lumps and twisty parts disappear from view. Our suitably chosen small animal may undergo conception, birth, maturation, prime with reproduction, deterioration of age, and death. At any stage abnormality or disease can occur. The unborn may be too weak to leave the egg; it may have a fatal or disabling defect of development. Our creature may become infected with fungus, bacteria or virus. When old it may lose reactions and abilities necessary for proper feeding and so starve. Conditions of life will affect it. Neglect, ignorance and accident play their part. There is little in these lives not analogous to our own, save this; in order more completely to observe their life events we hold them in captivity. In some significant way we interfere. If the animals that serve me are to be thus confined away from their usual environments, I try to avoid a feeling of evil-doing by offering a benevolent home. This necessitates foregoing the interesting life scheme: Suffering under Deliberate Cruelty. Achievement of such observations would seriously detract from accruement of joy and feelings of self-worth. I hope Dr. Mengele is not widely admired or emulated.

On the other hand, a life pattern needing no effort, no striving, no movement at all, is not usually kindest. To speak self-ishly, it may be a bore to the observer. Does this species normally run, swim, hop, jump, crawl in the course of daily life? Let it do so. Does it prefer to burrow, dig, hide from light? It will be happiest hidden. We can't guarantee happiness with safety for our salamanders or our sons, but we can offer shade for the former and light to the latter. The interest is in the choice.

Simplify or complicate, you run a risk. Individuals confined together may sharpen skills, may know sexual fulfillment, may get cabin fever, may irritate each other to death. Is this divorce necessary? It may save a life. Still, I don't want to miss the triumphant call of a competitive frog after his heroic exertion, or the soothing calm of conspecifics sharing alarm watch, the kissing of mated geckos, fingernail caresses of turtles. Do you remember the pain, victory and relief of birth's expulsion? Watch the waves of contraction ripple down a snake. For this she endures the risks of mating.

Those we keep with us, they do not know or care for us, do not wish to be touched or manipulated by us, do not resent us for their sufferings or feel gratitude for our gifts to them. Their lives, in the wild or out, are moments of fear and joy, satisfaction and hunger. They are cruelly torn or tear others, and are driven by chemical rhythms they do not question. They are denied, or spared, the need to rationalize, to tell stories about the conduct of their lives, or assess the past and plan the future. Small creatures, thank you, though and because you do not care. For this moment of life alone you are superb. If we are also unknowingly in captivity, I hope we may be as useful, edifying and pleasant, though we must follow our own nature as human beings. Try not to form bruises on the top of your head.

Unofficial Minutes of the CHS Board Meeting, June 14, 2013

The meeting was called to order at 7:52 P.M. at the Schaumburg Public Library. Board members Mike Dloogatch, Nancy Kloskowski, Jason Hood and Jenny Vollman were present.

Officers' Reports

Recording Secretary: The May minutes were read and discussed. A quorum was not present, so they could not be accepted.

Treasurer: The March and April financial reports were presented, discussed, and accepted.

Membership Secretary: Mike Dloogatch read a list of expiring memberships.

Sergeant-at-arms: There were 42 attendees at the April meeting.

Committee Reports

Shows:
• Notebaert Nature Museum, first full weekend of each month.
• Midwest Museum of Natural History, Sycamore, Illinois, June 22, Rockin' for the Reptiles.
• Rockford Botanic Gardens, July 3.

ReptileFest 2014: We have reserved the Physical Education Building at UIC for the weekend of April 12–13, 2014. Cards and flyers are being worked on.

Old Business

Junior Herpers: Speakers have been booked for Junior Herper meetings for the rest of the year.

National Herpetological Society: Jason Hood reported that the group is working on their bylaws.

Zoo trip: The Madison [WI] Area Herpetological Society has organized a behind-the-scenes tour at the National Mississippi River Museum & Aquarium, in Dubuque, Iowa, on July 20. They have invited CHS members to join them there.

Membership brochures/cards: We need to print more meeting invitation business cards.

Round Table

Rich Lamszus appreciated the chance to attend the meeting.

David Hoff's Mexican black kingsnake is doing well.

John Archer has raffle items that need to be stored since his house has been sold.

Jason Hood has eggs and babies coming soon.

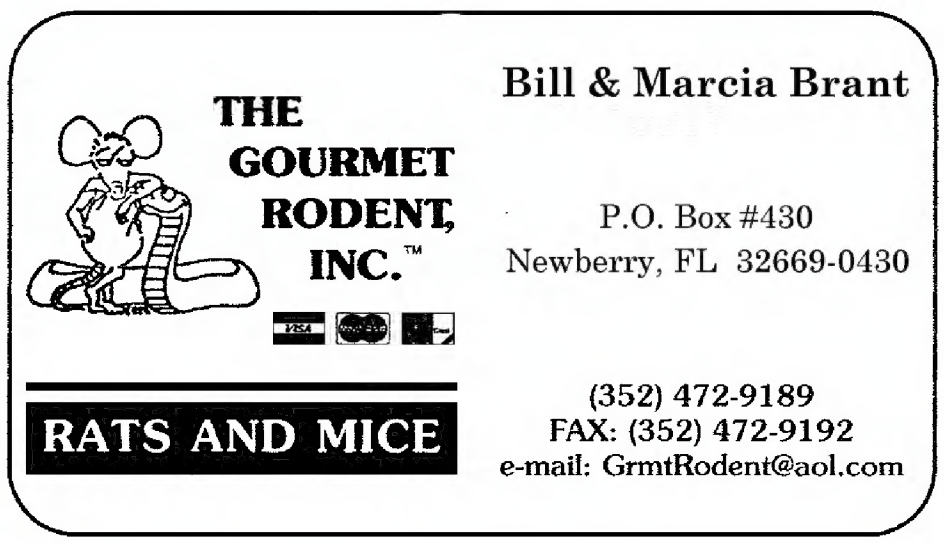
The meeting was adjourned at 8:44 P.M.

Respectfully submitted by Jenny Vollman

News and Announcements

MIDWEST HERPETOLOGICAL SYMPOSIUM

The Central Illinois Herpetological Society will host the 28th annual Midwest Herpetological Symposium August 30–September 1 at the Stony Creek Inn, East Peoria, Illinois. The registration fee is $75 / person. The Saturday night dinner banquet is an additional $20 / person. The event will begin Friday night with socializing, food and drink. Saturday speakers will be: **Dr. Mike Dreslik**, "Massasauga Conservation in Illinois"; **Jessi Krebs**, "Target Training Alligators for Medical Purposes"; **Chawna Schuette**, "Ozark Hellbender Release Work at the St. Louis Zoo"; **Toren Hill**, "The Burmese Pythons of Southern Florida"; **Dr. Travis Wilcoxen**, "Amphibian Development and Disease"; **Bob Bavirsha**, "Catching Crocodilians in Northern Illinois"; **Justin Michels**, "Herping in Southern Illinois." The banquet speaker will be **Dr. Robert Sprackland**, author of *Giant Lizards*. Sunday morning will feature a captive-bred animal sale. Those who are interested can sign up for a camping trip to Snake Road in southern Illinois September 1–2 ($40 fee). Room reservations at the Stoney Creek Inn (800 659-2220) are available at a special symposium rate of $109 / night up until two weeks prior to the event.



Advertisements

For sale: rats and mice—pinkies, fuzzies and adults. Quantity discounts. Please send a SASE for pricelist or call Bill Brant, *THE GOURMET RODENT*, PO Box 430, Newberry, FL 32669-0430, 352-472-9189, E-mail: GrmtRodent@aol.com.

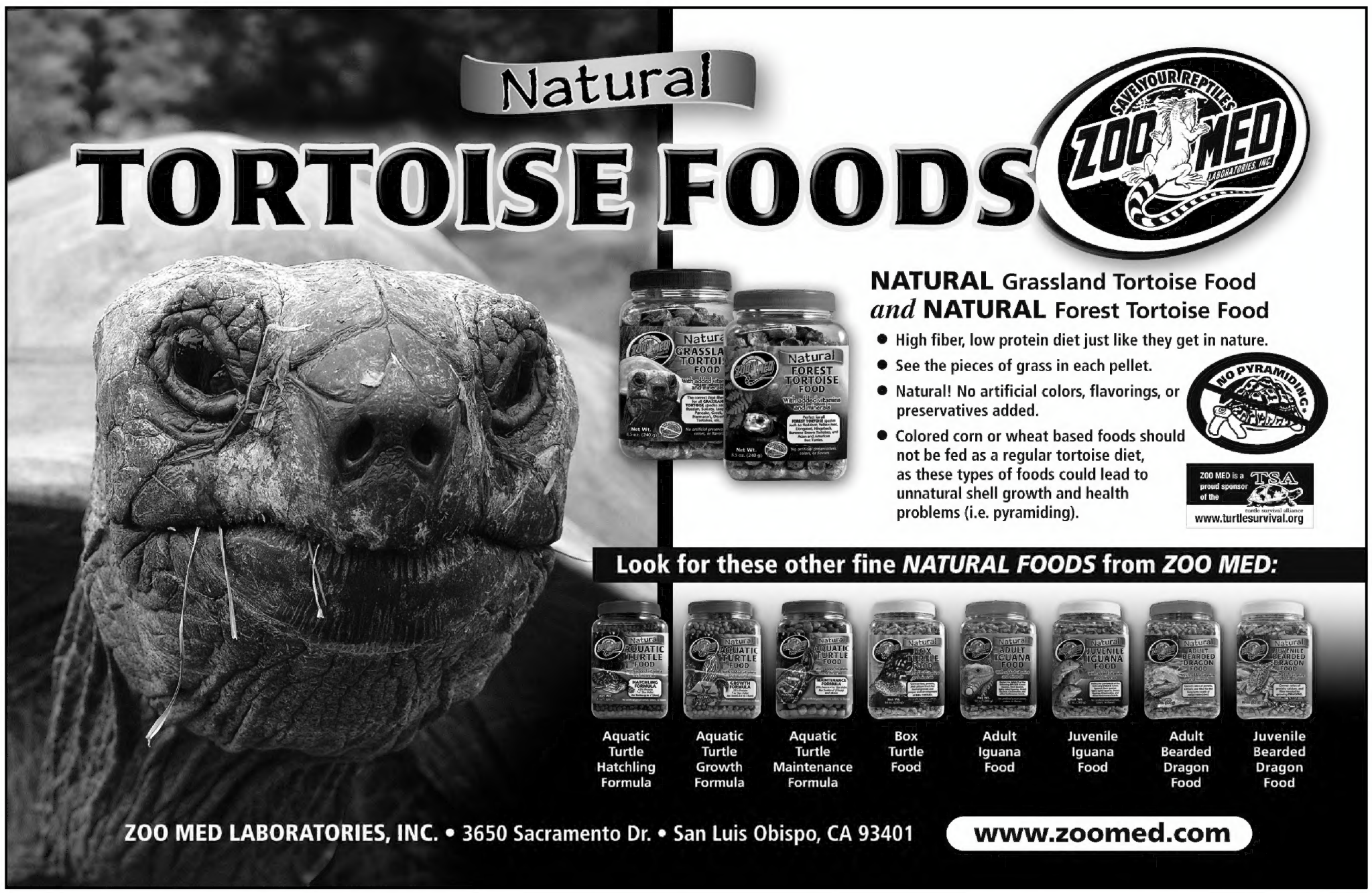
For sale: **highest quality frozen rodents**. I have been raising rodents for over 30 years and can supply you with the highest quality mice available in the U.S. These are always exceptionally clean and healthy with no urine odor or mixed in bedding. I feed these to my own reptile collection exclusively and so make sure they are the best available. All rodents are produced from my personal breeding colony and are fed exceptional high protein, low fat rodent diets; no dog food is ever used. Additionally, all mice are flash frozen and are separate in the bag, not frozen together. I also have ultra low shipping prices to most areas of the U.S. and can beat others shipping prices considerably. I specialize in the smaller mice sizes and currently have the following four sizes available: Small pink mice (1 day old—1 gm) , $25 /100; Large pink mice (4 to 5 days old—2 to 3 gm), $27.50 /100; Small fuzzy mice (7 to 8 days old—5 to 6 gm) , $30/100; Large fuzzy mice / hoppers (10 to 12 days old—8 to 10 gm), $35/100 Contact Kelly Haller at 785-234-3358 or by e-mail at kelhal56@hotmail.com

For sale: High quality, all locally captive-hatched tortoises, all bred and hatched here in the upper midwest. Baby leopards, Sri Lankan stars, and pancakes usually available, and are all well-started and feeding great! Leopards are $125 ea., Sri Lankans (2012 hatched) $475 ea. And Pancakes are $195 ea. Leopards for out of state sale/shipping require a veterinary health certificate (inquire for cost). E-mail at KKranz1@wi.rr.com or call Jim or Kirsten at 262 654 6303.

Herp tours: **Costa Rica herping adventures**. Join a small group of fellow herpers for 7 herp-filled days. We find all types of herps, mammals, birds,and insects, but our target is snakes. We average 52 per trip, and this is our 10th year doing it. If you would like to enjoy finding herps in the wild and sleep in a bed at night with air-conditioning, hot water and only unpack your suitcase once, instead of daily, then this is the place to do it. Go to our web-site http://hiss-n-things.com and read the highlights of our trips. Read the statistics of each trip and visit the link showing photos of the 40 different species we have found along the way. E-mail at jim.kavney@gmail.com or call Jim Kavney, 305-664-2881.

Summer Herpetological Field Classes: Research 4 Reptiles, LLC, has openings for ages 12 years to adult for herpetological field classes. Assist in real research studies and learn species identification, capture techniques, and data collection. All classes are limited to 8 individuals and are taught entirely outdoors at pond/prairie sites within Midewin National Tallgrass Prairie in Wilmington, Illinois. Registration details and class information can be found on our website at http://www.research4reptiles.biz. For questions, email Holly Zak at research4reptiles@comcast.net or call 630-337-0757.

Line ads in this publication are run free for CHS members—$2 per line for nonmembers. Any ad may be refused at the discretion of the Editor. Submit ads to mdloogatch@chicagoherp.org.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UPCOMING MEETINGS

The next meeting of the Chicago Herpetological Society will be held at 7:30 P.M., Wednesday, July 31, at the Peggy Notebaert Nature Museum, Cannon Drive and Fullerton Parkway, in Chicago. **Erica Mede**, a certified veterinary technician from Chicago Exotics Animal Hospital, will speak about "The Good, the Bad, and the Ugly of Poop." This talk will leave you breathless (not from the odor) and unable to look away from your reptile's feces again. You will learn about the good (beneficial intestinal flora and fauna), the bad (nasties that lurk in your reptile's colon—parasites and pathogens), and the ugly (differences between normal and abnormal feces).

At the August 28 meeting **Desiree Wong**, Public Relations Director for the International Reptile Conservation Foundation (IRCF), will speak about the IRCF's work with the Grand Cayman blue iguana and other endangered reptiles.

The regular monthly meetings of the Chicago Herpetological Society take place at Chicago's newest museum—the **Peggy Notebaert Nature Museum**. This beautiful building is at Fullerton Parkway and Cannon Drive, directly across Fullerton from the Lincoln Park Zoo. Meetings are held the last Wednesday of each month, from 7:30 P.M. through 9:30 P.M. Parking is free on Cannon Drive. A plethora of CTA buses stop nearby.

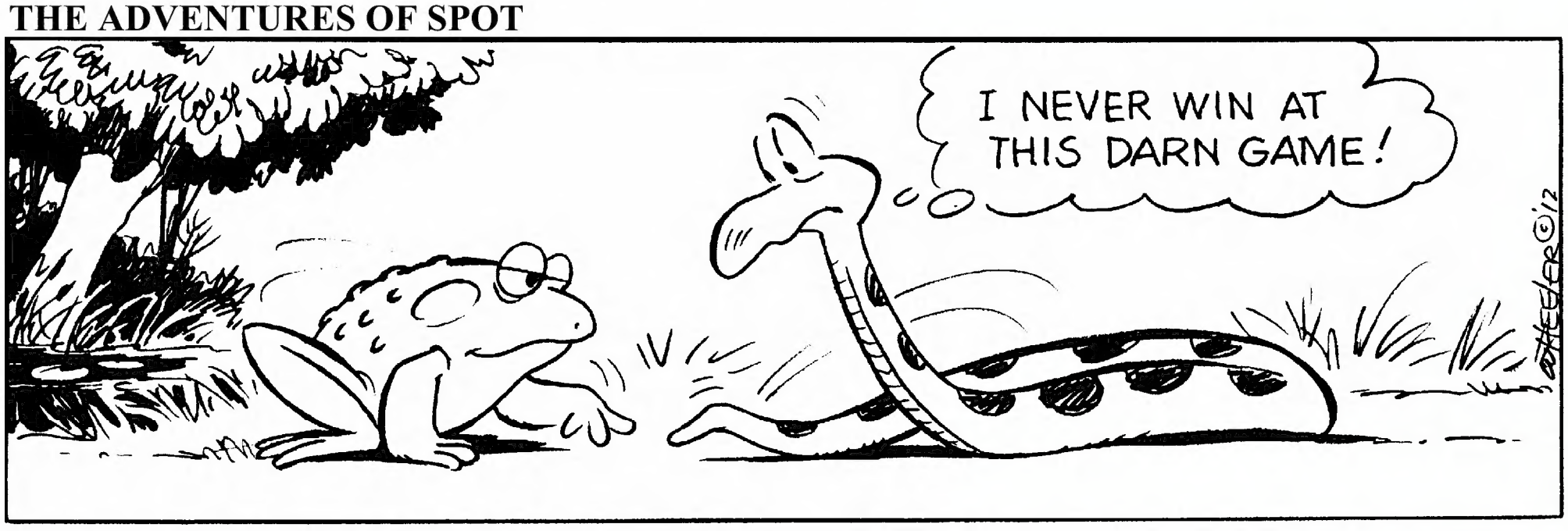
Board of Directors Meeting

Are you interested in how the decisions are made that determine how the Chicago Herpetological Society runs? And would you like to have input into those decisions? If so, mark your calendar for the next board meeting, to be held at 7:30 P.M., August 16, in the adult meeting room on the second floor of the Schaumburg Township District Library, 130 S. Roselle Road, Schaumburg..

The Chicago Turtle Club

The monthly meetings of the Chicago Turtle Club are informal; questions, children and animals are welcome. Meetings normally take place at the North Park Village Nature Center, 5801 N. Pulaski, in Chicago. Parking is free. For more info visit the group's Facebook page.

THE ADVENTURES OF SPOT



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